

DISCUSSION

The best habitats for bighorn sheep are in the southern part of the evaluation area. In fact, the eight best habitats are grouped in this part of the study area and are already inhabited by bighorn sheep.

In addition, there are several adjacent habitat blocks located near the Bruneau/Jarbridge confluence which, while they do not score well separately, complement each other to provide a good balance of habitat components. The Confluence, Long Draw, Cedar Tree, Lookout and Cougar/Poison habitat blocks make up about 24,000 acres with good all-around habitat qualities. These blocks deserve an increase in ranking that exceeds the sum of their individual rankings because adjacent habitats provide needed lambing, grazing and ram habitat in a useable pattern. What one habitat block lacks, a neighboring block supplies. For example, several of these habitat blocks lack lambing habitat while the Lookout block has lambing habitat but ranks low on access. The whole connected series of habitats from the confluence up to Black Rock Crossing on the Bruneau River and Columbet Creek on the Jarbridge River should be able to support about 400 bighorn sheep. The existing population is less than half that number but does exceed the minimum viable population number of 125. It appears likely that these populations will expand to fill the available habitat.

Many of these habitats could be improved to make them more suitable as bighorn sheep habitat. Suitability of several habitat segments could be improved by controlling grazing, improving the vegetation community or developing water. In some places (e.g., Bighorn Country) fire has resulted in a community of mostly exotic annuals such as cheatgrass (*Bromus tectorum*), tumble mustard (*Sisymbrium altissimum*), tansy mustard (*Descurainia* spp.) and Russian thistle (*Salsola kali*). Replacement of this community of invaders either through natural succession or seeding combined with low levels of grazing would increase the suitability of these habitat blocks. Other blocks were rated low because livestock grazing appeared heavy. Grazing pressure in these areas needs to be more thoroughly evaluated. There are also parcels with no practical potential as bighorn sheep habitat because they lack basic features such as lambing shelves or suitable slopes.

We recognize some limitations of our habitat suitability model. The current model focuses on ewe habitat and may not identify even superior ram habitat. Rams have more general habitat requirements than ewes and may be able to find suitable range adjacent to any habitat that is suitable for ewes. For example, we found several habitat segments without lambing shelves. These habitats may be well suited for rams. One shortcoming of our preliminary method was the lack of detail in the grazing evaluation. We recommend a more detailed inventory of forage availability in the case of a proposed transplant. These are general procedures that should be followed up with a specific on ground inventories of habitat components before bighorn sheep transplant decisions are made.

A complicating factor was frequent low-level overflights by military jets near Sheepshead Draw. The effect of overflights is unknown but needs to be addressed in the habitat evaluation process.

RECOMMENDATIONS

1. Manage suitable areas as bighorn sheep habitat.

We recommend that areas suitable for bighorn sheep be managed as bighorn sheep habitat. This management should begin with the following conservative approach and be changed as indicated by monitoring or research.

a. Avoid activities and structures which concentrate cattle near canyons. Among such activities and structures are salting, corrals, fences, water pipelines and other water developments.

b. Restore vegetation in disturbed areas by establishing a mixture of native grasses and shrubs consistent with wilderness study area guidelines.

c. Strictly avoid overuse of forage within a quarter mile of canyons.

d. Develop water sources for bighorn sheep in side drainages off the Bruneau and Jarbidge Rivers such as Long Draw, Stiff Tree Draw, and Sheepshead Draw. Water source development was identified as a need in the Jarbidge Resource Area Resource Management Plan.

e. Discourage fence building between canyons. Bighorn sheep often travel between canyons to avoid disturbances. Fences along these escape routes could pose a serious hazard.

2. Monitor the bighorn sheep population.

We recommend that a long-term program be established to closely monitor bighorn sheep numbers, distribution and health. This monitoring would be useful to identify management needs and potential problems. Monitoring could supply information about the natural range expansion process in bighorn sheep and the need for transplants in the management strategy.

Emphasize further delineation of important seasonal use areas and identification of critical areas, such as lambing habitat.

Monitoring of the forage resource in bighorn sheep habitat is highly recommended. Radio telemetry could be an important part of an effective monitoring package.

3. Prepare and implement a Habitat Management Plan (HMP).

We recommend that plans for bighorn sheep habitat management be formally developed and coordinated through an HMP. This plan should address habitat improvements and management. Potential habitat improvements include developing water sources and restoring disturbed rangeland to a natural condition. A standard fire rehabilitation plan should be developed which includes reestablishment of native shrubs, perennial grasses and a forb component in Wilderness Study Areas. Management alternatives should include limiting grazing on the forage resource to reserve adequate forage for bighorn sheep, designing fire rehabilitation efforts to consider the needs of bighorns, and avoiding building structures near bighorn sheep habitat. The effectiveness of a HMP should be evaluated by monitoring.

4. Prepare a conservation strategy for this bighorn sheep population.

We recommend that existing state and national strategic plans be applied to manage bighorn sheep in this particular area. Existing plans include the Idaho Department of Fish and Game's 1991-1995 bighorn sheep management plan, and BLM's Mountain Sheep Ecosystem Management Strategy in the 11 Western States and Alaska. The conservation strategy we recommend would develop a specific local plan of action from the general goals contained in the two agency plans. Coordination and permitting should be initiated to address anticipated transplant priorities and population goals.

5. Increase small populations in good habitat before establishing new herds in marginal habitat.

The bighorn sheep population appears healthy but small. Data from this study indicate the population could be larger. There are still unoccupied habitats that will support bighorn sheep. We recommend allowing the existing population to grow and expand its distribution naturally for 3-5 years before considering transplanting bighorns into more marginal habitat areas. We suggest the habitat improvements we recommended begin in the south part of this range near the confluence of the two rivers and proceed northward as the bighorn sheep population expands.

Several projects could be accomplished in anticipation of expanding the bighorn sheep population northward. Principle among these potential projects is reclaiming native shrub/grass communities in the burned over part of Sheep Creek. We recognize that potential habitat improvements are limited due to the designation of much of this area as a wilderness study area. Coordination and permitting should be initiated to address anticipated transplant priorities and population goals.

LITERATURE CITED

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